

2009-07-20 [M1015-70071US] Sequence Listing_ST25
SEQUENCE LISTING

<110> MINERVA BIOTECHNOLOGIES CORPORATION
Bamdad, Cynthia

<120> DIAGNOSTIC TUMOR MARKERS, DRUG SCREENING FOR TUMORIGENESIS
INHIBITION, AND COMPOSITIONS AND METHODS FOR TREATMENT OF CANCER

<130> M1015-70071US

<140> 09/996,069

<141> 2001-11-27

<160> 12

<170> PatentIn version 3.5

<210> 1

<211> 39

<212> PRT

<213> Artificial Sequence

<220>

<223> Histidine-Tagged Truncated Receptor (His-TR)

<400> 1

Gly Thr Ile Asn Val His Asp Val Glu Thr Gln Phe Asn Gln Tyr Lys
1 5 10 15

Thr Glu Ala Ala Ser Pro Tyr Asn Leu Thr Ile Ser Asp Val Ser Val
20 25 30

Ser His His His His His
35

<210> 2

<211> 51

<212> PRT

<213> Artificial Sequence

<220>

<223> His-PSMGFR peptides

<400> 2

Gly Thr Ile Asn Val His Asp Val Glu Thr Gln Phe Asn Gln Tyr Lys
1 5 10 15

Thr Glu Ala Ala Ser Pro Tyr Asn Leu Thr Ile Ser Asp Val Ser Val
20 25 30

Ser Asp Val Pro Phe Pro Phe Ser Ala Gln Ser Gly Ala His His His
35 40 45

His His His
50

<210> 3
 <211> 54
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> "Extended Sequence of the MUC1 Growth Factor Receptor" (ESMGFR)

<400> 3

Val Gln Leu Thr Leu Ala Phe Arg Glu Gly Thr Ile Asn Val His Asp
 1 5 10 15

Val Glu Thr Gln Phe Asn Gln Tyr Lys Thr Glu Ala Ala Ser Pro Tyr
 20 25 30

Asn Leu Thr Ile Ser Asp Val Ser Val Ser Asp Val Pro Phe Pro Phe
 35 40 45

His His His His His His
 50

<210> 4
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Histidine-Tagged Primary Sequence of the Interchain binding
 Region (His-PSIBR)

<400> 4

His His His His His His Gly Phe Leu Gly Leu Ser Asn Ile Lys Phe
 1 5 10 15

Arg Pro Gly Ser Val Val Val Gln Leu Thr Leu Ala Phe Arg Glu
 20 25 30

<210> 5
 <211> 46
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Histidine-Tagged Repeat Motif 2 (His-RM2)

<400> 5

Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly
 1 5 10 15

Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro
 20 25 30

Pro Ala His Gly Val Thr Ser Ala His His His His His His
 35 40 45

<210> 6
 <211> 33
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Truncated Receptor (TR)

<400> 6

Gly Thr Ile Asn Val His Asp Val Glu Thr Gln Phe Asn Gln Tyr Lys
 1 5 10 15

Thr Glu Ala Ala Ser Pro Tyr Asn Leu Thr Ile Ser Asp Val Ser Val
 20 25 30

Ser

<210> 7
 <211> 45
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Primary Sequence of the MUC1 Growth Factor Receptor (PSMGFR)

<400> 7

Gly Thr Ile Asn Val His Asp Val Glu Thr Gln Phe Asn Gln Tyr Lys
 1 5 10 15

Thr Glu Ala Ala Ser Pro Tyr Asn Leu Thr Ile Ser Asp Val Ser Val
 20 25 30

Ser Asp Val Pro Phe Pro Phe Ser Ala Gln Ser Gly Ala
 35 40 45

<210> 8
 <211> 25
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Primary Sequence of the Interchain Binding Region) (PSIBR)

<400> 8

Gly Phe Leu Gly Leu Ser Asn Ile Lys Phe Arg Pro Gly Ser Val Val
 1 5 10 15

Val Gln Leu Thr Leu Ala Phe Arg Glu
20 25

<210> 9
<211> 40
<212> PRT
<213> Artificial Sequence

<220>
<223> Repeat Motif 2 (RM2)

<400> 9

Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly
1 5 10 15

Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro
20 25 30

Pro Ala His Gly Val Thr Ser Ala
35 40

<210> 10
<211> 1255
<212> PRT
<213> Artificial Sequence

<220>
<223> Mucin 1 Precursor, Genbank Accession Number: P15941

<400> 10

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Thr
1 5 10 15

Val Leu Thr Val Val Thr Gly Ser Gly His Ala Ser Ser Thr Pro Gly
20 25 30

Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser
35 40 45

Thr Glu Lys Asn Ala Val Ser Met Thr Ser Ser Val Leu Ser Ser His
50 55 60

Ser Pro Gly Ser Gly Ser Ser Thr Thr Gln Gly Gln Asp Val Thr Leu
65 70 75 80

Ala Pro Ala Thr Glu Pro Ala Ser Gly Ser Ala Ala Thr Trp Gly Gln
85 90 95

Asp Val Thr Ser Val Pro Val Thr Arg Pro Ala Leu Gly Ser Thr Thr
100 105 110

Pro Pro Ala His Asp Val Thr Ser Ala Pro Asp Asn Lys Pro Ala Pro
115 120 125

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
130 135 140

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
145 150 155 160

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
165 170 175

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
180 185 190

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
195 200 205

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
210 215 220

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
225 230 235 240

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
245 250 255

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
260 265 270

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
275 280 285

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
290 295 300

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
305 310 315 320

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
325 330 335

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
340 345 350

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
Page 5

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
370 375 380

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
385 390 395 400

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
405 410 415

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
420 425 430

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
435 440 445

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
450 455 460

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
465 470 475 480

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
485 490 495

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
500 505 510

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
515 520 525

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
530 535 540

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
545 550 555 560

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
565 570 575

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
580 585 590

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
595 600 605

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
 610 615 620

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
 625 630 635 640

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
 645 650 655

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
 660 665 670

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
 675 680 685

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
 690 695 700

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
 705 710 715 720

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
 725 730 735

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
 740 745 750

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
 755 760 765

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
 770 775 780

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
 785 790 795 800

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
 805 810 815

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
 820 825 830

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
 835 840 845

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
 850 855 860

2009-07-20 [M1015-70071US] Sequence Listing_ST25

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
865 870 875 880

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
885 890 895

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
900 905 910

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
915 920 925

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Asn
930 935 940

Arg Pro Ala Leu Gly Ser Thr Ala Pro Pro Val His Asn Val Thr Ser
945 950 955 960

Ala Ser Gly Ser Ala Ser Gly Ser Ala Ser Thr Leu Val His Asn Gly
965 970 975

Thr Ser Ala Arg Ala Thr Thr Thr Pro Ala Ser Lys Ser Thr Pro Phe
980 985 990

Ser Ile Pro Ser His His Ser Asp Thr Pro Thr Thr Leu Ala Ser His
995 1000 1005

Ser Thr Lys Thr Asp Ala Ser Ser Thr His His Ser Ser Val Pro
1010 1015 1020

Pro Leu Thr Ser Ser Asn His Ser Thr Ser Pro Gln Leu Ser Thr
1025 1030 1035

Gly Val Ser Phe Phe Phe Leu Ser Phe His Ile Ser Asn Leu Gln
1040 1045 1050

Phe Asn Ser Ser Leu Glu Asp Pro Ser Thr Asp Tyr Tyr Gln Glu
1055 1060 1065

Leu Gln Arg Asp Ile Ser Glu Met Phe Leu Gln Ile Tyr Lys Gln
1070 1075 1080

Gly Gly Phe Leu Gly Leu Ser Asn Ile Lys Phe Arg Pro Gly Ser
1085 1090 1095

Val Val Val Gln Leu Thr Leu Ala Phe Arg Glu Gly Thr Ile Asn
1100 1105 1110

Val His Asp Val Glu Thr Gln Phe Asn Gln Tyr Lys Thr Glu Ala
1115 1120 1125

Ala Ser Arg Tyr Asn Leu Thr Ile Ser Asp Val Ser Val Ser Asp
1130 1135 1140

Val Pro Phe Pro Phe Ser Ala Gln Ser Gly Ala Gly Val Pro Gly
1145 1150 1155

Trp Gly Ile Ala Leu Leu Val Leu Val Cys Val Leu Val Ala Leu
1160 1165 1170

Ala Ile Val Tyr Leu Ile Ala Leu Ala Val Cys Gln Cys Arg Arg
1175 1180 1185

Lys Asn Tyr Gly Gln Leu Asp Ile Phe Pro Ala Arg Asp Thr Tyr
1190 1195 1200

His Pro Met Ser Glu Tyr Pro Thr Tyr His Thr His Gly Arg Tyr
1205 1210 1215

Val Pro Pro Ser Ser Thr Asp Arg Ser Pro Tyr Glu Lys Val Ser
1220 1225 1230

Ala Gly Asn Gly Gly Ser Ser Leu Ser Tyr Thr Asn Pro Ala Val
1235 1240 1245

Ala Ala Ala Ser Ala Asn Leu
1250 1255

<210> 11
<211> 302
<212> PRT
<213> Artificial Sequence

<220>
<223> Proopiomelanocortin
(adrenocorticotropin/beta-lipotropin/alpha-mela- nocyte
stimulating hormone/beta-melanocyte stimulating
hormone/beta-endorphin) [Homo sapiens]. Accession number:

<400> 11

Ala Ala Ala Lys Glu Gly Lys Lys Ser Arg Asp Arg Glu Arg Pro Pro
1 5 10 15

Ser Val Pro Ala Leu Arg Glu Gln Pro Pro Glu Thr Glu Pro Gln Pro
20 25 30

2009-07-20 [M1015-70071US] Sequence Listing_ST25

Ala Trp Lys Met Pro Arg Ser Cys Cys Ser Arg Ser Gly Ala Leu Leu
35 40 45

Leu Ala Leu Leu Leu Gln Ala Ser Met Glu Val Arg Gly Trp Cys Leu
50 55 60

Glu Ser Ser Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Glu
65 70 75 80

Cys Ile Arg Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Met Phe
85 90 95

Pro Gly Asn Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr
100 105 110

Val Met Gly His Phe Arg Trp Asp Arg Phe Gly Arg Arg Asn Ser Ser
115 120 125

Ser Ser Gly Ser Ser Gly Ala Gly Gln Lys Arg Glu Asp Val Ser Ala
130 135 140

Gly Glu Asp Cys Gly Pro Leu Pro Glu Gly Gly Pro Glu Pro Arg Ser
145 150 155 160

Asp Gly Ala Lys Pro Gly Pro Arg Glu Gly Lys Arg Ser Tyr Ser Met
165 170 175

Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val
180 185 190

Lys Val Tyr Pro Asn Gly Ala Glu Asp Glu Ser Ala Glu Ala Phe Pro
195 200 205

Leu Glu Phe Lys Arg Glu Leu Thr Gly Gln Arg Leu Arg Glu Gly Asp
210 215 220

Gly Pro Asp Gly Pro Ala Asp Asp Gly Ala Gly Ala Gln Ala Asp Leu
225 230 235 240

Glu His Ser Leu Leu Val Ala Ala Glu Lys Lys Asp Glu Gly Pro Tyr
245 250 255

Arg Met Glu His Phe Arg Trp Gly Ser Pro Pro Lys Asp Lys Arg Tyr
260 265 270

Gly Gly Phe Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu
275 280 285

Phe Lys Asn Ala Ile Ile Lys Asn Ala Tyr Lys Lys Gly Glu
 290 295 300

<210> 12
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> RGD

<400> 12

His His His His His His Ser Ser Ser Ser Gly Ser Ser Ser Ser Gly
 1 5 10 15

Ser Ser Ser Ser Gly Gly Arg Gly Asp Ser Gly Arg Gly Asp Ser
 20 25 30